

Claim Amendments

2, 1. (Currently amended) A composition for treating stainless steel parts at temperatures between 750°F and 950°F comprising alkali metal cyanates and alkali carbonate and wherein said cyanate ion is present in a weight percentage of greater than 45% and less than 55.2%, and wherein the composition is molten and homogenous at temperatures between 750°F and 950°F.

2. (Original) The invention as defined in claim 1 wherein said cyanate ion is present in a weight percentage of greater than 45% and less than 50%.

3. (Original) The invention as defined in claim 1 wherein said cyanate ion is present in weight percentage of about 48%.

4. (Original) The invention as defined in claim 1 wherein said alkali metal is selected from the group of sodium, potassium, and mixtures thereof.

5. (Original) The invention as defined in claim 1 wherein said alkali metal is a mixture of sodium and potassium.

6. (Original) The invention as defined in claim 5 wherein the ratio of potassium to sodium is about 3.9 to 1.0.

7. (Currently amended) A method for producing a nitride or a hard case on a stainless steel workpiece comprising the steps of:

providing a fused bath of alkali metal cyanate, and alkali metal carbonate, wherein said cyanate ion is present in a weight percentage of greater than 45% and less than 55.2%, maintained at a temperature of between 750°F and 950°F, and immersing a stainless steel workpiece in said bath for a sufficient time to form a hard case thereon.

8. (Original) The invention as defined in claim 7 wherein said cyanate ion is present in a weight percentage of between 48% and 50%.

9. (Currently amended) The invention as defined in claim 7 wherein said cyanate ion is present in ~~A~~ a weight percentage of about 48%.

10. (Original) The invention as defined in claim 7 wherein said alkali metal is selected from the group of sodium, potassium, and mixtures thereof.

11. (Original) The invention as defined in claim 7 wherein said alkali metal is a mixture of sodium and potassium.

12. (Original) The invention as defined in claim 11 wherein the ratio of potassium to sodium is about 3.9 to 1.0.

a₁

13. (Canceled) The invention as defined in claim 7 wherein said workpiece is stainless steel.

14. (Currently amended) The invention as defined in claim ~~13~~ 7 wherein said workpiece is austenitic stainless steel.

15. (Canceled) The invention as defined in claim 14 wherein said workpiece is immersed in said bath for at least four hours at a temperature of between 750°F and 850°F.

16. (Currently amended) The invention as defined in claim ~~15~~ 18 wherein the temperature is between about 750°F and 815°F and the workpiece is 304 stainless steel.

17. (Currently amended) The invention as defined in claim ~~13~~ 7 wherein the workpiece is hardenable stainless steel and the temperature is about 950°F.

18. (Re-presented – formerly dependent claim 15) A method for producing a nitride or a hard case on an austenitic stainless steel workpiece comprising the steps of:

providing a fused bath of alkali metal cyanate and alkali metal carbonate, wherein said cyanate ion is present in a weight percentage of greater than 45% and less than 55.2%, maintained at a temperature of between 750°F and 850°F, and immersing a workpiece of said austenitic stainless steel in said bath for at least four hours.

9,